CLAIMS

What is claimed is:

1. An oscillator circuit for use in a local oscillator of an RF communications device that communicates over an RF channel, said oscillator circuit comprising an oscillator transistor coupled to a power supply voltage (Vcc) through a buffer transistor and a biasing network having bias voltage outputs coupled to a control input of said oscillator transistor and to a control input of said buffer transistor, said bias voltage network being coupled to Vcc, and further comprising circuitry for setting a magnitude of Vcc as a function of at least one of RF channel conditions or an operational mode of the RF communications device.

2. An oscillator circuit as in claim 1, wherein said RF channel conditions are determined by calculating a signal-to-noise ratio (SNR).

3. An oscillator circuit as in claim 1, wherein the magnitude of Vcc is set between about zero volts and some maximum value.

4. An oscillator circuit as in claim 1, wherein said operational mode is one of a TDMA mode or a CDMA mode.

5. An oscillator circuit as in claim 1, wherein said operational mode is one of a burst transmission and reception mode or a substantially continuous transmission and reception mode.

6. An oscillator circuit as in claim 1, wherein said operational mode is one of a narrow bandwidth mode or a wider bandwidth mode.

7. An oscillator circuit as in claim 1, wherein the value of Vcc is set so as to minimize power consumption as a function of an amount of allowable local oscillator phase noise, and where Vcc is coupled to said oscillator transistor directly or via a buffer transistor.

8. An oscillator circuit for use in a local oscillator of an RF communications device that communicates over an RF channel, said oscillator circuit comprising an oscillator

transistor coupled to a power supply voltage (Vcc) through a buffer transistor and a bias voltage network having bias voltage outputs coupled to a control input of said oscillator transistor and to a control input of said buffer transistor, said bias voltage network being coupled to another power supply voltage Vbias, and further comprising circuitry for setting a magnitude of both Vcc and Vbias as a function of at least one of RF channel conditions or an operational mode of the RF communications device.

9. An oscillator circuit as in claim 8, wherein said RF channel conditions are determined by calculating a signal-to-noise ratio (SNR).

10. An oscillator circuit as in claim 8, wherein the magnitude of Vcc and Vbias is set between about zero volts and some maximum value.

11. An oscillator circuit as in claim 8, wherein said operational mode is one of a TDMA mode or a CDMA mode.

12. An oscillator circuit as in claim 8, wherein said operational mode is one of a burst transmission and reception mode or a substantially continuous transmission and reception mode.

13. An oscillator circuit as in claim 8, wherein said operational mode is one of a narrow bandwidth mode or a wider bandwidth mode.

14. An oscillator circuit as in claim 8, wherein the values of Vcc and Vbias are set so as to minimize power consumption as a function of an amount of allowable local oscillator phase noise.

15. A broad bandwidth/narrow bandwidth dual mode RF transceiver, comprising:

at least one phase locked loop (PLL) that includes a voltage controlled oscillator (VCO) providing a local oscillator signal for at least one of an I/Q modulator or an I/Q demodulator;

a processor responsive to an output of said I/Q demodulator for determining at

least one aspect of RF channel quality; and

circuitry coupled between said processor and said VCO for minimizing at least VCO power consumption as a function of an amount of allowable VCO phase noise for a current RF channel quality.

16. A dual mode RF transceiver as in claim 15, wherein at least said VCO can be turned off between bursts when operating in said narrow bandwidth mode.

17. A dual mode RF transceiver as in claim 15, wherein a magnitude of one or both of a VCO supply voltage Vcc and a VCO biasing supply voltage Vbias are variable by said circuitry for varying the power consumption of said VCO.

18. A dual mode RF transceiver as in claim 17, wherein the magnitude of Vcc and Vbias is variable between about zero volts and some maximum value.

19. A dual mode RF transceiver as in claim 15, wherein said RF channel quality is determined by calculating a signal-to-noise ratio (SNR).

20. A method for operating a broad bandwidth/narrow bandwidth dual mode RF transceiver, comprising:

operating at least one phase locked loop (PLL) that includes a voltage controlled oscillator (VCO) to provide a local oscillator signal for at least one of an I/Q modulator or an I/Q demodulator;

responsive to an output of said I/Q demodulator, determining at least one aspect of RF channel quality; and

minimizing at least the power consumption of said VCO as a function of an amount of allowable VCO phase noise for a current RF channel quality.

21. A method as in claim 20, and further comprising turning off at least said VCO between bursts when operating in said narrow bandwidth mode.